

APPENDIX B

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// GRDA Initialisation (P/Q = 2133300/32768)
5   divReload[0] = 65;
    divReload[1] = 9;
    divReload[2] = 1;
    divReload[3] = 2;
    divReload[4] = 3;
10  divReload[5] = 1;
    divReload[6] = 1;
    divReload[7] = 1;
    divReload[8] = 2;
    divReload[9] = 1;
15  divReload[10] = 2;
    divReload[11] = 2;
    divDepth = 12;

    for (i = 0; i < divDepth; i = i + 1)
20  begin
        divCurrent[i] = 1;
        divCurrent[i] = divReload[i] / 2 + 1;
    end

25  // GRDA Core
task GRDA_Get;
    output [0:31] grda_val;
    reg[0:4] i;
30  begin
        divCurrent[1] = divCurrent[1] - 1;
        if (divDepth < 2 || divCurrent[1] != 0)
            begin
                grda_val = divReload[0];
35  end
            else
                begin
                    grda_val = divReload[0] + 1;
                    divCurrent[1] = divReload[1];
40  divCurrent[2] = divCurrent[2] - 1 ;
                    for (i = 2; i < divDepth && divCurrent[i] == 0; i = i +
1)
                        begin
                            divCurrent[i - 1] = divCurrent[i - 1] + 1;
```

```
divCurrent[i] = divReload[i];  
divCurrent[i + 1] = divCurrent[i + 1] - 1 ;  
    end  
    end  
5      end  
    endtask
```